

ISO 14830-1:2019-12 (E)

Condition monitoring and diagnostics of machine systems - Tribology-based monitoring and diagnostics - Part 1: General requirements and guidelines

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols (and abbreviated terms)	2
5	Lubricant and wear particle analysis	2
5.1	Asset management	2
5.2	Strategies	2
5.2.1	Before failure onset (as a proactive strategy tool)	2
5.2.2	During failure development (as a predictive strategy tool)	2
5.2.3	Following machine failure (as a reactive strategy tool)	2
5.2.4	Other benefits	2
5.3	Information to be gained through lubricant and wear debris	3
5.3.1	Lubricant properties	3
5.3.2	Lubricant contamination	3
5.3.3	Machine wear	3
6	Measurement parameters	3
6.1	Lubricant and wear debris parameters	3
6.2	Lubricant test suites	3
6.3	Sampling frequency	4
7	Sampling	4
7.1	Objectives	4
7.2	Pressurized sample points	5
7.3	Static sample points	6
7.4	On-line and in-line sampling	7
7.5	Magnetic plug sampling	7
7.6	Grease sampling	8
8	Fluid sampling equipment	8
8.1	General	8
8.2	Sample containers	8
8.3	Sample tubing	8
8.4	Manually operated hand held sample pumps	8
8.5	Other equipment	9
8.6	Sample transport	9
9	Sample analysis	9
9.1	General	9
9.2	On-site analysis	9
9.3	Off-site analysis	10
9.4	Sample documentation	10

10	Alarm criteria	10
11	Diagnosis and prognosis	11
12	Results reporting	12
13	Personnel qualifications	12
13.1	Field analysts	12
13.2	Laboratory analysts	12
	Annex A (informative) Common lubricant and wear debris parameters	13
	Annex B (informative) Typical lubricant test suites and frequencies	22
	Annex C (informative) Sampling procedure examples	25
	Annex D (informative) Commercial laboratory selection guidelines	29
	Annex E (informative) Sample documentation requirements	31
	Annex F (informative) Alarm criteria guidelines	33
	Annex G (informative) Diagnosis and prognosis guidelines	38
	Bibliography	48